

10533838

=> d his

(FILE 'HOME' ENTERED AT 18:59:33 ON 10 MAY 2007)

FILE 'REGISTRY' ENTERED AT 18:59:57 ON 10 MAY 2007

L1 STRUCTURE UPLOADED

L2 23 S L1

L3 353 S L1 FULL

FILE 'HCAPLUS' ENTERED AT 19:04:15 ON 10 MAY 2007

L4 11 S L3

L5 10 S L4 AND BROWN, W?/AU

L6 1 S L4 NOT L5

L7 0 S L6 AND GRIFFIN, A?/AU

FILE 'CAOLD' ENTERED AT 19:05:17 ON 10 MAY 2007

=> s 13

L8 0 L3

10533838

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NEWS 2 JAN 08 CHEMLIST enhanced with New Zealand Inventory of Chemicals  
NEWS 3 JAN 16 CA/CAPLUS Company Name Thesaurus enhanced and reloaded  
NEWS 4 JAN 16 IPC version 2007.01 thesaurus available on STN  
NEWS 5 JAN 16 WPIDS/WPINDEX/WPIX enhanced with IPC 8 reclassification data  
NEWS 6 JAN 22 CA/CAPLUS updated with revised CAS roles  
NEWS 7 JAN 22 CA/CAPLUS enhanced with patent applications from India  
NEWS 8 JAN 29 PHAR reloaded with new search and display fields  
NEWS 9 JAN 29 CAS Registry Number crossover limit increased to 300,000 in  
multiple databases  
NEWS 10 FEB 15 PATDPASPC enhanced with Drug Approval numbers  
NEWS 11 FEB 15 RUSSIAPAT enhanced with pre-1994 records  
NEWS 12 FEB 23 KOREAPAT enhanced with IPC 8 features and functionality  
NEWS 13 FEB 26 MEDLINE reloaded with enhancements  
NEWS 14 FEB 26 EMBASE enhanced with Clinical Trial Number field  
NEWS 15 FEB 26 TOXCENTER enhanced with reloaded MEDLINE  
NEWS 16 FEB 26 IFICDB/IFIPAT/IFIUDB reloaded with enhancements  
NEWS 17 FEB 26 CAS Registry Number crossover limit increased from 10,000  
to 300,000 in multiple databases  
NEWS 18 MAR 15 WPIDS/WPIX enhanced with new FRAGHITSTR display format  
NEWS 19 MAR 16 CASREACT coverage extended  
NEWS 20 MAR 20 MARPAT now updated daily  
NEWS 21 MAR 22 LWPI reloaded  
NEWS 22 MAR 30 RDISCLOSURE reloaded with enhancements  
NEWS 23 APR 02 JICST-EPLUS removed from database clusters and STN  
NEWS 24 APR 30 GENBANK reloaded and enhanced with Genome Project ID field  
NEWS 25 APR 30 CHEMCATS enhanced with 1.2 million new records  
NEWS 26 APR 30 CA/CAPLUS enhanced with 1870-1889 U.S. patent records  
NEWS 27 APR 30 INPADOC replaced by INPADOCDB on STN  
NEWS 28 MAY 01 New CAS web site launched  
NEWS 29 MAY 08 CA/CAPLUS Indian patent publication number format defined

NEWS EXPRESS NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT  
MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
AND CURRENT DISCOVER FILE IS DATED 25 SEPTEMBER 2006.

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Updated Search

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FILE 'HOME' ENTERED AT 18:59:33 ON 10 MAY 2007

=>

=> file reg

COST IN U.S. DOLLARS

SINCE FILE

ENTRY

TOTAL

SESSION

FULL ESTIMATED COST

0.21

0.21

FILE 'REGISTRY' ENTERED AT 18:59:57 ON 10 MAY 2007

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STRUCTURE FILE UPDATES: 9 MAY 2007 HIGHEST RN 934521-72-9

DICTIONARY FILE UPDATES: 9 MAY 2007 HIGHEST RN 934521-72-9

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<http://www.cas.org/support/stngen/stndoc/properties.html>

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L1 STRUCTURE UPLOADED

=> sl 1

SL IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system. For a list of commands available to you in the current file, enter "HELP COMMANDS" at an arrow prompt (=>).

=> s ll

SAMPLE SEARCH INITIATED 19:03:59 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 100 TO ITERATE

100.0% PROCESSED 100 ITERATIONS  
SEARCH TIME: 00.00.01

23 ANSWERS

Updated Search

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FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 1401 TO 2599  
PROJECTED ANSWERS: 173 TO 747

L2 23 SEA SSS SAM L1

=> s l1 full  
THE ESTIMATED SEARCH COST FOR FILE 'REGISTRY' IS 171.65 U.S. DOLLARS  
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N or END:y  
FULL SEARCH INITIATED 19:04:13 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 2047 TO ITERATE

100.0% PROCESSED 2047 ITERATIONS 353 ANSWERS  
SEARCH TIME: 00.00.01

L3 353 SEA SSS FUL L1

=> file hcaplus  
COST IN U.S. DOLLARS SINCE FILE TOTAL  
ENTRY SESSION  
FULL ESTIMATED COST 174.80 175.01

FILE 'HCAPLUS' ENTERED AT 19:04:15 ON 10 MAY 2007  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
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FILE COVERS 1907 - 10 May 2007 VOL ISS ISS  
FILE LAST UPDATED: 9 May 2007 (20070509/ED)  
held by the publishers listed in the PUBLISHER (PB) field (available  
for records published or updated in Chemical Abstracts after December  
26, 1996), unless otherwise indicated in the original publications.  
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FILE COVERS 1907 - 10 May 2007 VOL 146 ISS 20  
FILE LAST UPDATED: 1 May 2007 (20070501/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate

=> s l3  
L4 11 L3  
=> s l4 and brown, w?/au  
4124 BROWN, W?/AU  
L5 10 L4 AND BROWN, W?/AU  
=> d l5, ibib abs fhitstr, 1-10

L5 ANSWER 1 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2005:638846 HCAPLUS  
DOCUMENT NUMBER: 143:153295

Updated Search

10533838

TITLE: Preparation of diarylmethylidenylpiperidines for the management of pain  
 INVENTOR(S): Brown, William; Griffin, Andrew; Walpole, Christopher  
 PATENT ASSIGNEE(S): Astrazeneca AB, Swed.  
 SOURCE: PCT Int. Appl., 56 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005066128	A1	20050721	WO 2005-SE13	20050105
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2005204009	A1	20050721	AU 2005-204009	20050105
CA 2552850	A1	20050721	CA 2005-2552850	20050105
EP 1706380	A1	20061004	EP 2005-704687	20050105
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, HR, IS			
CN 1926105	A	20070307	CN 2005-80006251	20050105
IN 2006DN03735	A	20070420	IN 2006-DN3735	20060629
NO 2006003617	A	20061009	NO 2006-3617	20060809
PRIORITY APPLN. INFO.:			SE 2004-25	A 20040109
			WO 2005-SE13	W 20050105
OTHER SOURCE(S):	MARPAT 143:153295			
GI				

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Title compds. I [R1 = (un)substituted aryl, heteroaryl; R2 = alkyl, H; R3 = H, COR4, SO2R4, etc.; R4 = H, alkyl, alkenyl, etc.] and their pharmaceutically acceptable salts were prepared For example, N-acetylation of aniline II (R2 = H) with acetic anhydride afforded the TFA salt of diarylmethylidenylpiperidine II (R2 = COCH3) in 100% yield. In human  $\delta$  receptor assays, certain examples of compds. I exhibited IC50 values ranging from 0.22-2.34 nM, with an average of 0.98 nM (sic).

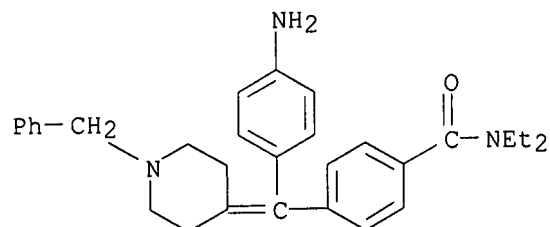
IT 859911-39-0P  
 RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (preparation of diarylmethylidenylpiperidines for the management of pain)

RN 859911-39-0 HCAPLUS

CN Benzamide, 4-[(4-aminophenyl)[1-(phenylmethyl)-4-piperidinylidene]methyl]-N,N-diethyl-, monohydrochloride (9CI) (CA INDEX NAME)

Updated Search

10533838



● HCl

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

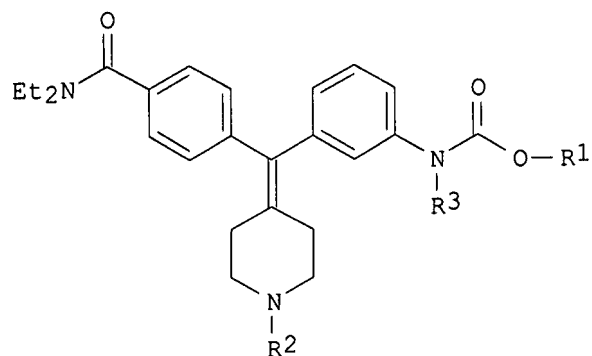
L5 ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:638845 HCAPLUS  
 DOCUMENT NUMBER: 143:153294  
 TITLE: Preparation of diarylmethylidenepiperidines for the management of pain  
 INVENTOR(S): Brown, William; Griffin, Andrew  
 PATENT ASSIGNEE(S): Astrazeneca AB, Swed.  
 SOURCE: PCT Int. Appl., 67 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005066127	A1	20050721	WO 2005-SE12	20050105
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2005204008	A1	20050721	AU 2005-204008	20050105
CA 2552946	A1	20050721	CA 2005-2552946	20050105
EP 1706379	A1	20061004	EP 2005-704686	20050105
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, HR, IS				
CN 1926106	A	20070307	CN 2005-80006331	20050105
IN 2006DN03740	A	20070420	IN 2006-DN3740	20060629
NO 2006003618	A	20061009	NO 2006-3618	20060809
PRIORITY APPLN. INFO.:			SE 2004-26	A 20040109
			WO 2005-SE12	W 20050105
OTHER SOURCE(S):			MARPAT 143:153294	

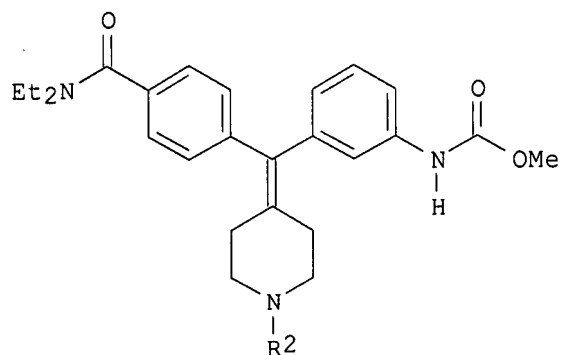
Updated Search

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GI



I



II

AB Title compds. I [R<sub>1</sub>, R<sub>3</sub> = H, alkyl, cycloalkyl, etc.; R<sub>2</sub> = alkyl, alkenyl, cycloalkyl, etc.] and their pharmaceutically acceptable salts were prepared. For example, N-alkylation of piperidine II (R<sub>2</sub> = H) with 1-iodopropane afforded the TFA salt of diarylmethylidenylpiperidine II (R<sub>2</sub> = CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>) in 54% yield. In human  $\delta$  receptor assays, certain examples of compds. I exhibited IC<sub>50</sub> values ranging from 0.18-3.7 nM, with an average of 0.56 nM (sic).

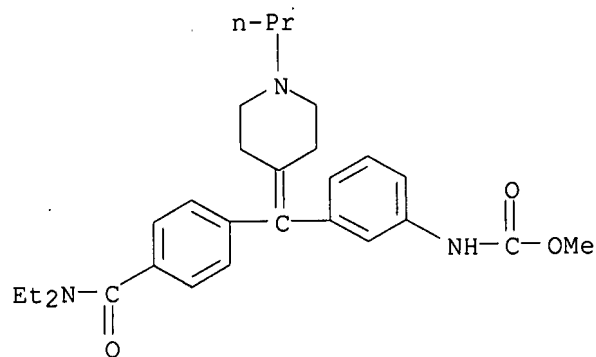
IT 859911-03-8P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of diarylmethylidenylpiperidines for the management of pain)

RN 859911-03-8 HCAPLUS

CN Carbamic acid, [3-[[4-[(diethylamino)carbonyl]phenyl](1-propyl-4-piperidinyldene)methyl]phenyl]-, methyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:1016017 HCAPLUS  
 DOCUMENT NUMBER: 142:6430  
 TITLE: Preparation of diarylmethylidene piperidine derivatives as opioid  $\delta$  receptor ligands for treating pain, anxiety and functional gastrointestinal disorders  
 INVENTOR(S): Brown, William L.; Griffin, Andrew; Jin, Shujuan  
 PATENT ASSIGNEE(S): Astrazeneca AB, Swed.; Astrazeneca UK Limited  
 SOURCE: PCT Int. Appl., 131 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004101522	A1	20041125	WO 2004-GB2074	20040513
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004238618	A1	20041125	AU 2004-238618	20040513
CA 2525860	A1	20041125	CA 2004-2525860	20040513
EP 1641757	A1	20060405	EP 2004-732665	20040513
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
BR 2004010347	A	20060530	BR 2004-10347	20040513
CN 1823040	A	20060823	CN 2004-80020330	20040513
JP 2007503457	T	20070222	JP 2006-530500	20040513
US 2007099957	A1	20070503	US 2005-555980	20051108
NO 2005005998	A	20060213	NO 2005-5998	20051216



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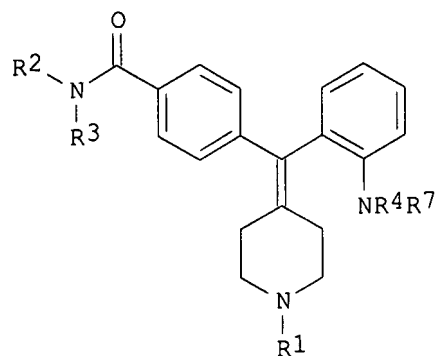
PRIORITY APPLN. INFO.:

SE 2003-1444  
SE 2004-24  
WO 2004-GB2074

A 20030516  
A 20040109  
W 20040513

OTHER SOURCE(S):  
GI

MARPAT 142:6430



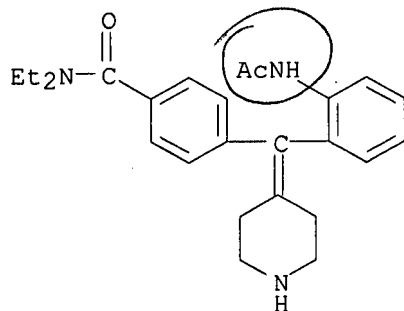
AB The title compds. [I; R1 = H, (un)substituted alkyl, aryl, etc.; R2-R4 = H, (un)substituted alkyl, cycloalkyl; R7 = H, OH, alkyl, etc.] which are useful in therapy, in particular in the management of pain, were prepared E.g., a multi-step synthesis of I [R1 = H; R2, R3 = Et; R4 = C(=O)Ph; R7 = H], starting from Me 4-(bromomethyl)benzoate, was given. The compds. I were found to be active toward human  $\delta$  receptors. Generally, for most of the compds. I the IC50 values are in the range of 0.48 nM to 17.9 nM. The pharmaceutical composition comprising the compound I is disclosed.

IT 798549-77-6P

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(preparation of diarylmethylidene piperidine derivs. as opioid  $\delta$  receptor ligands for treating pain, anxiety and functional gastrointestinal disorders)

RN 798549-77-6 HCAPLUS

CN Benzamide, 4-[[2-(acetilamino)phenyl]-4-piperidinyldenemethyl]-N,N-diethyl- (9CI) (CA INDEX NAME)



Isomer  
103, or  
ODP

REFERENCE COUNT:

3

THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

Updated Search

10533838

L5 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:610034 HCAPLUS

DOCUMENT NUMBER: 141:140326

TITLE: Preparation of diarylmethylidene piperidines as  $\delta$ -opioid receptor ligands for the treatment of pain.

INVENTOR(S): Brown, William; Griffin, Andrew; Walpole, Christopher

PATENT ASSIGNEE(S): Astrazeneca Ab, Swed.; Astrazeneca UK Limited

SOURCE: PCT Int. Appl., 60 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004062562	A2	20040729	WO 2004-GB99	20040113
WO 2004062562	A3	20040916		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ			
AU 2004204390	A1	20040729	AU 2004-204390	20040113
CA 2510382	A1	20040729	CA 2004-2510382	20040113
EP 1587790	A2	20051026	EP 2004-701624	20040113
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
BR 2004006614	A	20051206	BR 2004-6614	20040113
CN 1738801	A	20060222	CN 2004-80002275	20040113
JP 2006516559	T	20060706	JP 2006-500202	20040113
IN 2005DN02714	A	20070112	IN 2005-DN2714	20050620
US 2006154964	A1	20060713	US 2005-541522	20050707
NO 2005003809	A	20051017	NO 2005-3809	20050812
PRIORITY APPLN. INFO.:			SE 2003-105	A 20030116
			WO 2004-GB99	W 20040113

OTHER SOURCE(S): MARPAT 141:140326  
GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Title compds. I [R1 = (un)substituted aryl, heteroaryl; R2, R3, R4, R5 = H, alkyl, cycloalkyl] and their pharmaceutically acceptable salts were prepared For example, acylation of aniline II [R6 = H], e.g., prepared from 4-(bromomethyl)benzoic acid Me ester in 8-steps, with acetyl chloride afforded piperidine II [R6 = COMe] as the trifluoroacetic acid salt in 52% yield. In human  $\delta$ -opioid receptor binding assays, 7-examples of compds. I exhibited IC<sub>50</sub> values ranging from 0.19-1.49 nM. Compds. I are claimed useful in the management of pain.

IT 725242-56-8P, 4-[[3-(Acetylamino)phenyl][1-(thien-2-ylmethyl)piperidin-4-ylidene]methyl]-N,N-diethylbenzamide  
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(preparation of diarylmethylidene piperidines as  $\delta$ -opioid receptor

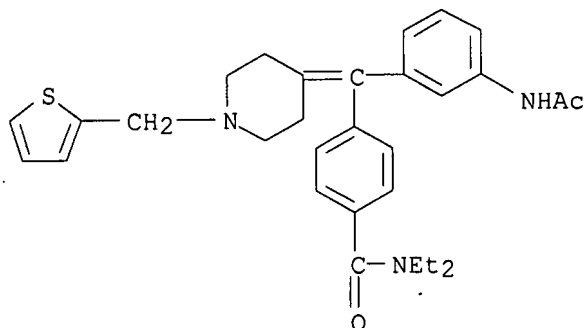
Updated Search

10533838

ligands for the treatment of pain.)

RN 725242-56-8 HCAPLUS

CN Benzamide, 4-[[3-(acetilamino)phenyl][1-(2-thienylmethyl)-4-piperidinyldene]methyl]-N,N-diethyl- (9CI) (CA INDEX NAME)



L5 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:606467 HCAPLUS

DOCUMENT NUMBER: 141:157038

TITLE: Preparation of 4-[3-(sulfonylamino)phenyl-1-(cyclylmethyl)piperidin-4-ylidenemethyl]benazmide derivatives as delta opioid receptor ligands

INVENTOR(S): Brown, William; Griffin, Andrew; Walpole, Christopher

PATENT ASSIGNEE(S): Astrazeneca Ab, Swed.; Astrazeneca UK Limited

SOURCE: PCT Int. Appl., 54 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004063193	A1	20040729	WO 2004-GB61	20040113
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ				
EP 1590346	A1	20051102	EP 2004-701628	20040113
EP 1590346	B1	20061025		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2006515352	T	20060525	JP 2006-500189	20040113
AT 343571	T	20061115	AT 2004-701628	20040113
US 2006148850	A1	20060706	US 2005-541664	20050707
PRIORITY APPLN. INFO.:			SE 2003-104	A 20030116
			WO 2004-GB61	W 20040113
OTHER SOURCE(S):		MARPAT 141:157038		
GI				

10533838

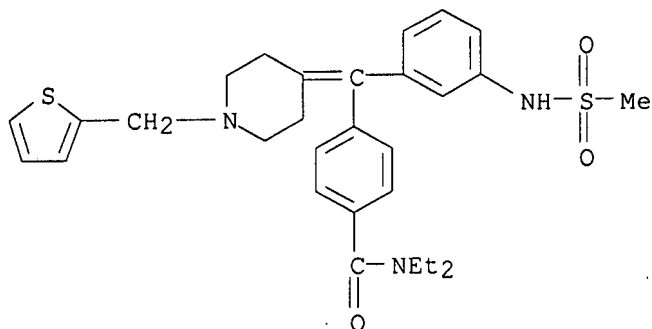
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Title compds. I [R1 = aryl, heteroaryl, etc.; R2-5 = H, alkyl, cycloalkyl, etc.] are prepared For instance, 4-[bromo(4-carboxyphenyl)methylene]piperidine-1-carboxylic acid tert-Bu ester (preparation given) is converted to the diethylamide (CH<sub>2</sub>Cl<sub>2</sub>, i-BuO<sub>2</sub>CCl, HNet<sub>2</sub>), deprotected (CH<sub>2</sub>Cl<sub>2</sub>, TFA), alkylated with thiophene-2-carboxaldehyde (1,2-dichloroethane, NaHB(OAc)<sub>3</sub>), coupled to m-aminobenzenboronic acid (PhMe/EtOH/H<sub>2</sub>O, Pd(PPh<sub>3</sub>)<sub>4</sub>, Na<sub>2</sub>CO<sub>3</sub>) and finally treated with methanesulfonic anhydride to give II. Compds. of the invention have IC<sub>50</sub> in the range of 0.18 - 0.56 nM for the  $\delta$ -opioid receptor. I are useful in the management of pain.

IT 728917-19-9P, N,N-Diethyl-4-[[3-[(methylsulfonyl)amino]phenyl][1-(thien-2-ylmethyl)piperidin-4-ylidene]methyl]benzamide  
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(preparation of 4-[3-(sulfonylamino)phenyl-1-(cyclylmethyl)piperidin-4-ylidenemethyl]benazmide derivs. as delta opioid receptor ligands)

RN 728917-19-9 HCAPLUS

CN Benzamide, N,N-diethyl-4-[[3-[(methylsulfonyl)amino]phenyl][1-(2-thienylmethyl)-4-piperidinyldiene]methyl]- (9CI) (CA INDEX NAME)



L5 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:606441 HCAPLUS

DOCUMENT NUMBER: 141:140324

TITLE: Preparation of diarylmethylidene piperidines as  $\delta$ -opioid receptor ligands for the treatment of pain.

INVENTOR(S): Brown, William; Griffin, Andrew; Walpole, Christopher

PATENT ASSIGNEE(S): Astrazeneca Ab, Swed.; Astrazeneca UK Limited

SOURCE: PCT Int. Appl., 56 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004063157	A1	20040729	WO 2004-GB116	20040113
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,				

Updated Search

10533838

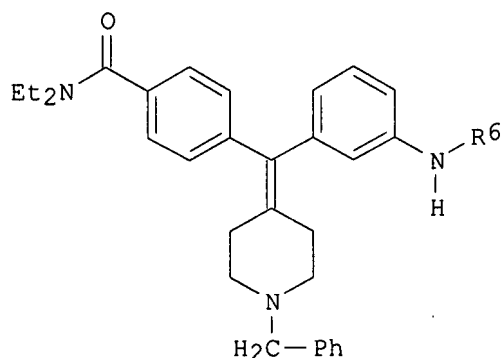
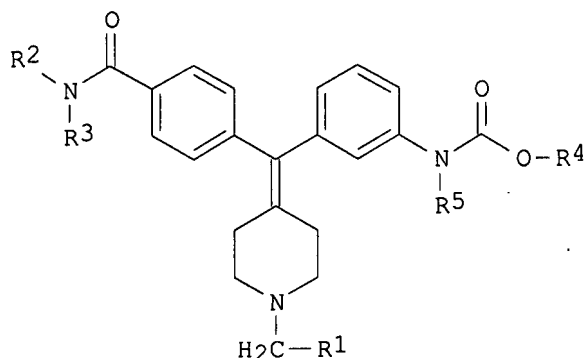
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,  
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ

AU 2004203969	A1	20040729	AU 2004-203969	20040113
CA 2510400	A1	20040729	CA 2004-2510400	20040113
EP 1587791	A1	20051026	EP 2004-701634	20040113
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
BR 2004006594	A	20051220	BR 2004-6594	20040113
CN 1735596	A	20060215	CN 2004-80002123	20040113
JP 2006515356	T	20060525	JP 2006-500208	20040113
IN 2005DN02716	A	20070112	IN 2005-DN2716	20050620
US 2006116399	A1	20060601	US 2005-541656	20050707
NO 2005003805	A	20051017	NO 2005-3805	20050812

PRIORITY APPLN. INFO.:

SE 2003-103	A	20030116
WO 2004-GB116	W	20040113

OTHER SOURCE(S): MARPAT 141:140324  
GI

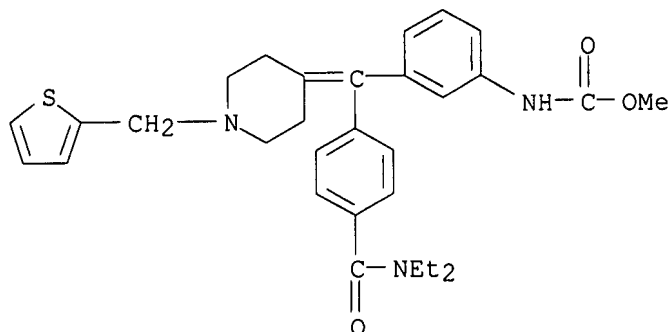


AB Title compds. I [R1 = (un)substituted aryl, heteroaryl; R2, R3, R4, R5 = H, alkyl, cycloalkyl] and their pharmaceutically acceptable salts were prepared. For example, acylation of aniline II [R6 = H], e.g., prepared from 4-(bromomethyl)benzoic acid Me ester in 8-steps, with Me chloroformate, afforded piperidine II [R6 = COOMe] as the trifluoroacetic acid salt in 38% yield. In human  $\delta$ -opioid receptor binding assays, 4-examples of compds. I exhibited IC50 values ranging from 0.30-0.48 nM, e.g., the IC50 value of piperidine II [R6 = COOMe] was 0.48 nM. Compds. I are claimed

Updated Search

10533838

useful in the management of pain.  
 IT 725229-70-9P  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU  
 (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES  
 (Uses)  
 (preparation of diarylmethylidene piperidines as  $\delta$ -opioid receptor  
 ligands for the treatment of pain.)  
 RN 725229-70-9 HCAPLUS  
 CN Carbamic acid, [3-[[4-[(diethylamino)carbonyl]phenyl][1-(2-thienylmethyl)-  
 4-piperidinyldiene]methyl]phenyl]-, methyl ester (9CI) (CA INDEX NAME)



L5 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:412920 HCAPLUS  
 DOCUMENT NUMBER: 140:423590  
 TITLE: Preparation of 4-(phenylpiperidin-4-ylidenemethyl)benzamides for treatment of pain, anxiety, or gastrointestinal disorders  
 INVENTOR(S): Brown, William; Griffin, Andrew  
 PATENT ASSIGNEE(S): Astrazeneca AB, Swed.  
 SOURCE: PCT Int. Appl., 96 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004041784	A1	20040521	WO 2003-SE1705	20031105
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003274885	A1	20040607	AU 2003-274885	20031105
EP 1567496	A1	20050831	EP 2003-759165	20031105
EP 1567496	B1	20070411		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				

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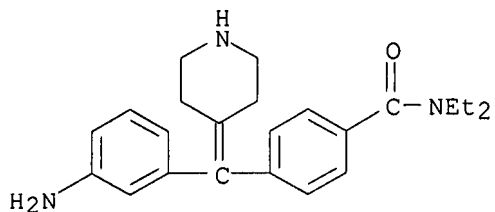
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK  
JP 2006514617 T 20060511 JP 2004-549774 20031105  
US 2006014789 A1 20060119 US 2005-533838 20050504  
PRIORITY APPLN. INFO.: SE 2002-3301 A 20021107  
WO 2003-SE1705 W 20031105  
OTHER SOURCE(S): MARPAT 140:423590  
GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Title compds. I [wherein R1 = (un)substituted alkyl, cycloalkyl(alkyl), (hetero)aryl, R8CO, R8SO2, R8SO, R8NHCO, R8CS, or R8NHCS; ; R2 = H or (un)substituted alkyl; R3 = H or (un)substituted alkoxy carbonyl, alkyl, or cycloalkyl(alkyl); R8 = (un)substituted alkyl, (hetero)aryl(alkyl), or cycloalkyl(alkyl); or pharmaceutically acceptable salts thereof] were prepared as opioid  $\delta$  receptor ligands. For example, reaction of 4-(bromomethyl)benzoic acid Me ester with P(OMe)<sub>3</sub>, followed by addition of 1-(tert-butoxycarbonyl)-4-piperidone in the presence of LDA in THF, gave 4-(4-methoxycarbonylbenzylidene)piperidine-1-carboxylic acid tert-Bu ester (35%). Addition of Br<sub>2</sub> (78%) and reaction with NaOH in MeOH provided 4-[bromo(4-carboxyphenyl)methylene]piperidine-1-carboxylic acid tert-Bu ester (87%). Conversion to the benzoyl chloride with iso-Bu chloroformate and amidation (73%) with Et<sub>2</sub>NH in the presence of TEA in CH<sub>2</sub>Cl<sub>2</sub>, followed by coupling with 3-aminophenylboronic acid using Pd(PPh<sub>3</sub>)<sub>4</sub> and Na<sub>2</sub>CO<sub>3</sub> in toluene/EtOH/H<sub>2</sub>O afforded N,N-diethyl-4-[(3-aminophenyl)(piperidin-4-ylidene)methyl]benzamide (97%). Alkylation of the amine with benzaldehyde and NaBH(OAc)<sub>3</sub> in 1,2-dichloroethane gave II. In binding assays using human 293S cells expressing cloned human opioid receptors and neomycin resistance, most compds. of the invention exhibited activity toward the  $\delta$  receptor with IC<sub>50</sub> values in the range of 0.14 nM - 31.2 nM. Exemplified compds. also showed some activity toward the  $\kappa$  and  $\mu$  receptors with IC<sub>50</sub> values in the ranges of 36 nM - 9680 nM and 3 nM - 5975 nM, resp. Thus, I and their pharmaceutical compns. are useful in therapy, in particular for the treatment of gastrointestinal disorders, anxiety, or pain (no data).

IT 209807-69-2P, N,N-Diethyl-4-[(3-aminophenyl)(piperidin-4-ylidene)methyl]benzamide  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate; preparation of (phenylpiperidinylidenemethyl)benzamides as  $\delta$  receptor agonists for treatment of pain, anxiety, or gastrointestinal disorders)

RN 209807-69-2 HCAPLUS  
CN Benzamide, 4-[(3-aminophenyl)-4-piperidinylidenemethyl]-N,N-diethyl- (9CI)  
(CA INDEX NAME)



Updated Search

10533838

L5 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:906200 HCAPLUS  
 DOCUMENT NUMBER: 138:4523  
 TITLE: Preparation of 4-(phenyl-piperidin-4-ylidene-methyl)-  
 benzamides as  $\delta$  opioid receptor agonists for the  
 treatment of pain, anxiety or gastrointestinal  
 disorders  
 INVENTOR(S): Wei, Zhongyong; Brown, William; Walpole,  
 Christopher  
 PATENT ASSIGNEE(S): Astrazeneca Ab, Swed.  
 SOURCE: PCT Int. Appl., 35 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002094812	A1	20021128	WO 2002-SE953	20020516
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2446332	A1	20021128	CA 2002-2446332	20020516
AU 2002305992	A1	20021203	AU 2002-305992	20020516
EE 200300540	A	20040216	EE 2003-540	20020516
EP 1395576	A1	20040310	EP 2002-733710	20020516
EP 1395576	B1	20050831		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
CN 1509282	A	20040630	CN 2002-810195	20020516
BR 2002009676	A	20040727	BR 2002-9676	20020516
HU 200401096	A2	20040928	HU 2004-1096	20020516
JP 2005510457	T	20050421	JP 2002-591485	20020516
AT 303379	T	20050915	AT 2002-733710	20020516
IN 2003MN01010	A	20050624	IN 2003-MN1010	20031103
ZA 2003008633	A	20050207	ZA 2003-8633	20031105
BG 108326	A	20041230	BG 2003-108326	20031107
US 2004142967	A1	20040722	US 2003-477821	20031113
US 7074808	B2	20060711		
IN 2004MN00262	A	20050429	IN 2004-MN262	20040506
PRIORITY APPLN. INFO.:			SE 2001-1765	A 20010518
			WO 2002-SE953	W 20020516
			IN 2003-MN1010	A3 20031103
OTHER SOURCE(S):			CASREACT 138:4523; MARPAT 138:4523	
GI				

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Updated Search



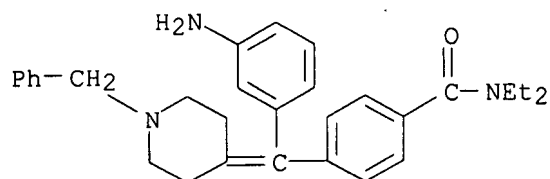
10533838

AB The title compds. [I; R1 = (un)substituted Ph, pyridyl, pyrrolyl, thienyl, furanyl, imidazolyl, triazolyl, thiazolyl and pyridyl N-oxide], useful in therapy, in particular in the management of pain, anxiety and functional gastrointestinal disorders, were prepared and formulated. Thus, treating the vinyl bromide II (5-step synthesis given) with TFA in CH<sub>2</sub>Cl<sub>2</sub> followed by N-alkylation of the deprotected intermediate with PhCH<sub>2</sub>Br, and coupling of III with 3-aminophenylboronic acid afforded I [R1 = Ph]. The exemplified compds. I showed IC<sub>50</sub> of 0.22-2.18 nM against  $\delta$  receptor binding.

IT 477185-74-3P  
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(preparation of 4-(phenyl-piperidin-4-ylidene-methyl)-benzamides as  $\delta$  opioid receptor agonists for the treatment of pain, anxiety or gastrointestinal disorders)

RN 477185-74-3 HCAPLUS

CN Benzamide, 4-[(3-aminophenyl)[1-(phenylmethyl)-4-piperidinylidene]methyl]-N,N-diethyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:906158 HCAPLUS

DOCUMENT NUMBER: 138:4531

TITLE: Preparation of 4-(phenyl-piperidin-4-ylidene-methyl)-benzamides as  $\delta$  opioid receptor agonists for the treatment of pain, anxiety or gastrointestinal disorders

INVENTOR(S): Brown, William; Walpole, Christopher; Wei, Zhongyong

PATENT ASSIGNEE(S): Astrazeneca Ab, Swed.

SOURCE: PCT Int. Appl., 38 pp.  
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2002094786	A1	20021128	WO 2002-SE954	20020516
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,			

Updated Search

10533838

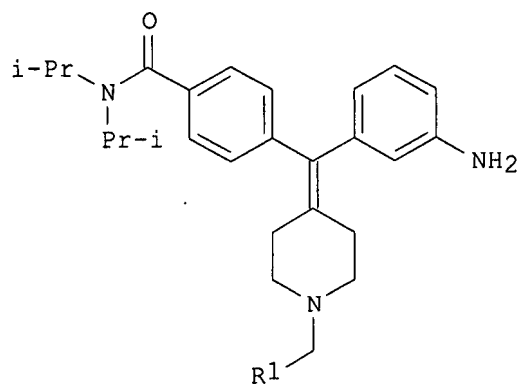
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 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 CA 2446155 A1 20021128 CA 2002-2446155 20020516  
 AU 2002307616 A1 20021203 AU 2002-307616 20020516  
 EE 200300527 A 20040216 EE 2003-527 20020516  
 EP 1395559 A1 20040310 EP 2002-771798 20020516  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 CN 1509271 A 20040630 CN 2002-810186 20020516  
 BR 2002009677 A 20040727 BR 2002-9677 20020516  
 HU 200401113 A2 20040928 HU 2004-1113 20020516  
 JP 2005508292 T 20050331 JP 2002-591459 20020516  
 IN 2003MN01014 A 20060106 IN 2003-MN1014 20031103  
 ZA 2003008634 A 20050525 ZA 2003-8634 20031105  
 BG 108327 A 20041230 BG 2003-108327 20031107  
 US 2004147556 A1 20040729 US 2003-477851 20031113  
 US 7022715 B2 20060404

PRIORITY APPLN. INFO.:

SE 2001-1766 A 20010518  
 WO 2002-SE954 W 20020516

OTHER SOURCE(S):  
 GI

CASREACT 138:4531; MARPAT 138:4531



AB The title compds. [I; R1 = (un)substituted Ph, pyridyl, pyrrolyl, thienyl, furanyl, imidazolyl, triazolyl, thiazolyl and pyridyl N-oxide], useful in therapy, in particular in the management of pain, anxiety and functional gastrointestinal disorders, were prepared and formulated. E.g., two alternative multi-step preps. of the benzamide I [R1 = Ph], were given. The exemplified compds. I showed IC50 of 0.78-4.85 nM against  $\delta$  receptor binding.

IT 477185-85-6P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

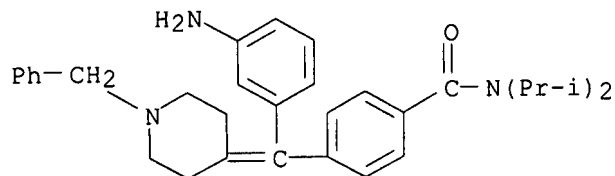
(preparation of 4-(phenyl-piperidin-4-ylidene-methyl)-benzamides as  $\delta$  opioid receptor agonists for the treatment of pain, anxiety or gastrointestinal disorders)

RN 477185-85-6 HCAPLUS

CN Benzamide, 4-[(3-aminophenyl)[1-(phenylmethyl)-4-piperidinyldene]methyl]-N,N-bis(1-methylethyl)- (9CI) (CA INDEX NAME)

Updated Search

10533838



REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:653166 HCAPLUS

DOCUMENT NUMBER: 134:4837

TITLE: N,N-Diethyl-4-(phenylpiperidin-4-ylidenemethyl)benzamide: A Novel, Exceptionally Selective, Potent  $\delta$  Opioid Receptor Agonist with Oral Bioavailability and Its Analogues

AUTHOR(S): Wei, Zhong-Yong; Brown, William; Takasaki, Bryan; Plobeck, Niklas; Delorme, Daniel; Zhou, Fei; Yang, Hua; Jones, Paul; Gawell, Lars; Gagnon, Helene; Schmidt, Ralf; Yue, Shi-Yi; Walpole, Chris; Payza, Kemal; St-Onge, Stephane; Labarre, Maryse; Godbout, Claude; Jakob, Andrea; Butterworth, Joanne; Kamassah, Augustus; Morin, Pierre-Emmanuel; Projean, Denis; Ducharme, Julie; Roberts, Edward

CORPORATE SOURCE: Departments of Chemistry and Pharmacology, Astra Zeneca R&D Montreal, Saint-Laurent, QC, H4S 1Z9, Can.

SOURCE: Journal of Medicinal Chemistry (2000), 43(21), 3895-3905

CODEN: JMCMAR; ISSN: 0022-2623

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The design, synthesis, and pharmacol. evaluation of a novel class of  $\delta$  opioid receptor agonists, N,N-diethyl-4-(phenylpiperidin-4-ylidenemethyl)benzamide (I) and its analogs, are described. These compds., formally derived from SNC-80 by replacing the piperazine ring with a piperidine ring containing an exocyclic carbon carbon double bond, were found to bind with high affinity and exhibit excellent selectivity for the  $\delta$  opioid receptor as full agonists. I, the simplest structure in the class, exhibited an  $IC_{50} = 0.87$  nM for the  $\delta$  opioid receptors and extremely high selectivity over the  $\mu$  receptors ( $\mu/\delta = 4370$ ) and the  $\kappa$  receptors ( $\kappa/\delta = 8590$ ). Rat liver microsome studies on a selected number of compds. show these olefinic piperidine compds. to be considerably more stable than SNC-80. This novel series of compds. appear to interact with  $\delta$  opioid receptors in a similar way to SNC-80 since they demonstrate similar SAR. Two general approaches have been established for the synthesis of these compds., based on dehydration of benzhydryl alcs. and Suzuki coupling reactions of vinyl bromide.

IT 209807-56-7P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)

(preparation of N,N-diethyl-4-(phenylpiperidin-4-ylidenemethyl)benzamide and its analogs as selective  $\delta$ -opioid receptor agonists)

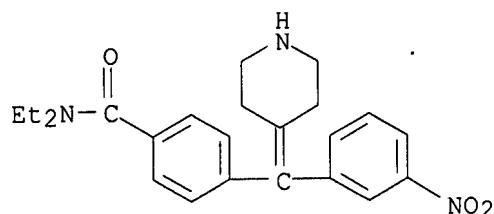
RN 209807-56-7 HCAPLUS

CN Benzamide, N,N-diethyl-4-[(3-nitrophenyl)-4-piperidinyldenemethyl]- (9CI)

Updated Search

10533838

(CA INDEX NAME)



REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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(FILE 'HOME' ENTERED AT 18:59:33 ON 10 MAY 2007)

FILE 'REGISTRY' ENTERED AT 18:59:57 ON 10 MAY 2007

L1 STRUCTURE UPLOADED  
L2 23 S L1  
L3 353 S L1 FULL

FILE 'HCAPLUS' ENTERED AT 19:04:15 ON 10 MAY 2007

L4 11 S L3  
L5 10 S L4 AND BROWN, W?/AU

=> s 14 not 15

L6 1 L4 NOT L5

=> s 16 and griffin, a?/au

872 GRIFFIN, A?/AU

L7 0 L6 AND GRIFFIN, A?/AU

=> d 16, ibib abs hitstr, 1

L6 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:479508 HCAPLUS

DOCUMENT NUMBER: 129:95406

TITLE: Preparation of 4-[diaryl- or (arylheteroaryl)methylene]piperidine derivatives with analgesic effect

INVENTOR(S): Delorme, Daniel; Roberts, Edward; Wei, Zhongyong

PATENT ASSIGNEE(S): Astra Pharma Inc., Can.; Astra Aktiebolag (Publ)

SOURCE: PCT Int. Appl., 129 pp.

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KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ,  
 PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG,  
 US, UZ, VN, YU, ZW  
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 FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM,  
 GA, GN, ML, MR, NE, SN, TD, TG

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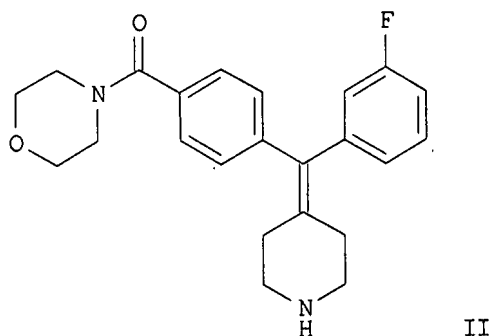
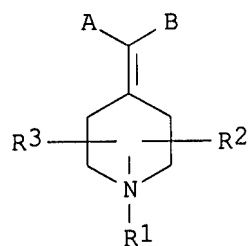
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OTHER SOURCE(S):  
 GI

MARPAT 129:95406

Updated Search



AB Compds. of general formula [I; R1 = H, linear or branched C1-6 alkyl, C1-6 alkenyl, C3-8 cycloalkyl, C3-6 cycloalkyl-C1-2 alkyl, C6-10 aryl, heteroaryl having 5 to 10 atoms selected from C, S, N, and O, C1-2 alkyl-(un)substituted C6-10 aryl, C1-2 alkyl-(un)substituted heteroaryl having 5 to 10 atoms selected from C, S, N, and O; R2, R3 = H, C1-6 alkyl; A = N and/or benzene-ring 4-carbamoylphenyl, 4-sulfamoylphenyl, acylaminophenyl, or acylphenyl wherein N and/or benzene-ring are optionally substituted; B = (un)substituted aromatic, heteroarom., hydroarom., or heterohydroarom. moieties having 5 to 10 atoms selected from C, S, N, and O atoms] are disclosed and claimed in the present application, as well as their pharmaceutically acceptable salts, pharmaceutical compns. comprising the novel compds., their use in therapy, in particular in the management of pain and in the treatment of gastrointestinal disorders, spinal injuries, disorders of the sympathetic nervous system, and isotopically labeled I as diagnostic agents. The compds. are ligands for opioid receptor, have analgesic effect, and are useful for the treatment of various pain conditions such as chronic pain, acute pain, cancer pain, pain caused by rheumatoid arthritis, migraine, visceral pain, etc. (no data). Thus, tert-Bu 4-[bromo[4-(morpholinocarbonyl)phenyl]methylene]-1-piperidinecarboxylate (preparation given) was coupled with 3-fluorophenylboronic acid in the presence of (PPh3)4Pd and Na2CO3 in aqueous EtOH at 80° for 2 h under N followed by treatment with CF3CO2H and acidification with aqueous HCl to give the title compound (II.HCl).

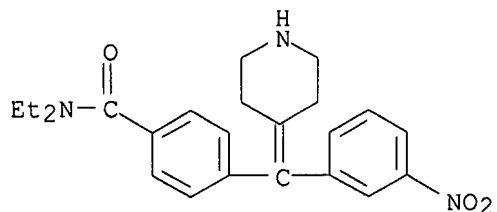
IT 209807-56-7P 209807-69-2P

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of [diaryl- or (arylheteroaryl)methylene]piperidine derivs. with analgesic effect)

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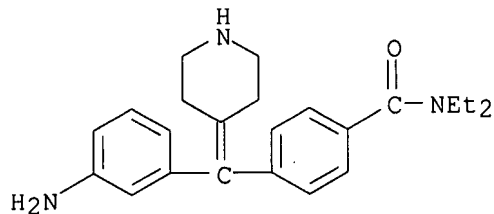
CN Benzamide, N,N-diethyl-4-[(3-nitrophenyl)-4-piperidinyldenemethyl]- (9CI)  
(CA INDEX NAME)



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RN 209807-69-2 HCAPLUS

CN Benzamide, 4-[(3-aminophenyl)-4-piperidinylidenemethyl]-N,N-diethyl- (9CI)  
(CA INDEX NAME)



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